

NAICS Code Descriptions

The following definitions of NAICS codes are from Statistics Canada's *North American Industry Classification System (NAICS) 2002 – Canada*^{xx}.

Oil and Gas Extraction (NAICS 2111)

This industry group comprises establishments primarily engaged in operating oil and gas field properties. Such activities may include exploration for crude petroleum and natural gas; drilling, completing and equipping wells; operating separators, emulsion breakers, desilting equipment and field gathering lines for crude petroleum; and all other activities in the preparation of oil and gas up to the point of shipment from the producing property. This industry includes the production of oil, the mining and extraction of oil from oil shale and oil sands, and the production of gas and hydrocarbon liquids, through gasification, liquefaction and pyrolysis of coal at the mine site.

Canadian NAICS codes also include several unique subcategories for mining and oil and gas extraction. Two used in the 2004 NPRI emissions analysis are:

Conventional Oil and Gas Extraction (NAICS 211113)

This Canadian industry comprises establishments primarily engaged in the exploration for, and/or production of, petroleum or natural gas from wells in which the hydrocarbons will initially flow or can be produced using normal pumping techniques.

Exclusion(s): Establishments primarily engaged in: producing crude oil from surface shales or tar sands or from reservoirs in which the hydrocarbons are semisolids and conventional production methods are not possible (211114, Non-Conventional Oil Extraction) performing oil field services for operators, on a contract or fee basis (213118, Services to Oil and Gas Extraction) recovering liquefied petroleum gases incidental to petroleum refining (324110, Petroleum Refineries).

Non-Conventional Oil Extraction (NAICS 211114)

This Canadian industry comprises establishments primarily engaged in producing crude oil from surface shales or tar sands or from reservoirs in which the hydrocarbons are semisolids and conventional production methods are not possible.

Exclusion(s): Establishments primarily engaged in: the exploration for, and/or production of, petroleum or natural gas from wells in which the hydrocarbons will initially flow or can be produced using normal pumping techniques (211113, Conventional Oil and Gas Extraction) performing oil field services for operators, on a contract or fee basis (213118, Services to Oil and Gas Extraction) recovering liquefied petroleum gases incidental to petroleum refining (324110, Petroleum Refineries).

Utilities (NAICS 22)

This sector comprises establishments primarily engaged in operating electric, gas and water utilities. These establishments generate, transmit, control and distribute electric

power; distribute natural gas; treat and distribute water; operate sewer systems and sewage treatment facilities; and provide related services, generally through a permanent infrastructure of lines, pipes and treatment and processing facilities.

Manufacturing (NAICS 31-33)

This sector comprises establishments primarily engaged in the physical or chemical transformation of materials or substances into new products. These products may be finished, in the sense that they are ready to be used or consumed, or semi-finished, in the sense of becoming a raw material for an establishment to use in further manufacturing. Related activities, such as the assembly of the component parts of manufactured goods; the blending of materials; and the finishing of manufactured products by dyeing, heat-treating, plating and similar operations are also treated as manufacturing activities. Manufacturing establishments are known by a variety of trade designations, such as plants, factories or mills.

Manufacturing establishments may own the materials which they transform or they may transform materials owned by other establishments. Manufacturing may take place in factories or in workers' homes, using either machinery or hand tools.

Certain activities involving the transformation of goods are classified in other sectors. Some examples are post-harvest activities of agricultural establishments, such as crop drying; logging; the beneficiating of mineral ores; the production of structures by construction establishments; and various activities conducted by retailers, such as meat cutting and the assembly of products such as bicycles and computers.

Wholesale Trade (NAICS 41)

This sector comprises establishments primarily engaged in wholesaling merchandise and providing related logistics, marketing and support services. The wholesaling process is generally an intermediate step in the distribution of merchandise; many wholesalers are therefore organized to sell merchandise in large quantities to retailers, and business and institutional clients. However, some wholesalers, in particular those that supply non-consumer capital goods, sell merchandise in single units to final users.

This sector recognizes two main types of wholesalers, that is, wholesale merchants and wholesale agents and brokers.

Wholesale Merchants

Wholesale merchants buy and sell merchandise on their own account, that is, they take title to the goods they sell. They generally operate from warehouse or office locations and they may ship from their own inventory or arrange for the shipment of goods directly from the supplier to the client. In addition to the sale of goods, they may provide, or arrange for the provision of, logistics, marketing and support services, such as packaging and labelling, inventory management, shipping, handling of warranty claims, in-store or co-op promotions, and product training. Dealers of machinery and equipment, such as dealers of farm machinery and heavy-duty trucks, also fall within this category.

Wholesale merchants are known by a variety of trade designations depending on their

relationship with suppliers or customers, or the distribution method they employ. Examples include wholesale merchants, wholesale distributors, drop shippers, rack-jobbers, import-export merchants, buying groups, dealer-owned cooperatives and banner wholesalers.

The first eight subsectors of wholesale trade comprise wholesale merchants. The grouping of these establishments into industry groups and industries is based on the merchandise line or lines supplied by the wholesaler.

Wholesale Agents and Brokers

Wholesale agents and brokers buy and sell merchandise owned by others on a fee or commission basis. They do not take title to the goods they buy or sell, and they generally operate at or from an office location.

Wholesale agents and brokers are known by a variety of trade designations including import-export agents, wholesale commission agents, wholesale brokers, and manufacturer's representatives and agents.

Transportation and Warehousing (NAICS 48-49)

This sector comprises establishments primarily engaged in transporting passengers and goods, warehousing and storing goods, and providing services to these establishments. The modes of transportation are road (trucking, transit and ground passenger), rail, water, air and pipeline. These are further subdivided according to the way in which businesses in each mode organize their establishments. National post office and courier establishments, which also transport goods, are included in this sector. Warehousing and storage establishments are subdivided according to the type of service and facility that is operated.

Many of the establishments in this sector are structured as networks, with activities, workers, and physical facilities distributed over an extensive geographic area.

Exclusion(s): Establishments primarily engaged in:
renting and leasing transportation equipment without operator (532, Rental and Leasing Services)

Table 9: 2004 NPRI Alberta CAC air emissions.

CAC	# of Facilities Reporting this CAC	Total Reported Emissions of this CAC (tonnes)
Sulphur dioxide	246	403,495
Oxides of nitrogen	2,243	395,191
Carbon monoxide	1,487	259,903
Ammonia	35	9,236
Total particulate matter	156	24,732
Particulate matter < 10 micrometres in diameter	1,047	17,458
Particulate matter < 2.5 micrometres in diameter	1,405	10,234
Volatile organic compounds	424	81,976

Table 10: 2004 NPRI Alberta non-CAC air emissions.

Substance	Facilities Reporting	Total Reported Emissions of the Substance (tonnes)
Acetaldehyde	13	205.640
Acetonitrile	1	6.891
Acetophenone	1	0.100
Acrolein	4	71.132
Anthracene	3	0.151
Arsenic (and its compounds)	13	0.474
Benzene	90	253.392
Benzo(a)anthracene	9	0.050
Benzo(a)phenanthrene	7	0.034
Benzo(a)pyrene	9	0.016
Benzo(b)fluoranthene	10	0.006
Benzo(e)pyrene	12	0.014
Benzo(g,h,i)perylene	11	0.009
Benzo(j)fluoranthene	8	0.003
Benzo(k)fluoranthene	10	0.003
Biphenyl	2	0.335
Butadiene:1,3-	3	12.806
Butoxyethanol:2-	4	80.694
Butyl alcohol:i-	4	24.419
Butyl alcohol:n-	2	79.146
Cadmium (and its compounds)	22	0.263
Calcium fluoride	1	2.901
Carbon disulphide	24	2,712.176
Carbon tetrachloride	1	0.018
Carbonyl sulphide	21	1,541.151
Chlorine	6	17.000
Chlorine dioxide	2	11.906
Chloroethane	2	0.320
Chloroform	2	0.127

Substance	Facilities Reporting	Total Reported Emissions of the Substance (tonnes)
Chromium (and its compounds)	8	7.018
Cobalt (and its compounds)	6	0.462
Copper (and its compounds)	6	1.759
Cresol (mixed isomers and their salts)	1	0.097
Cumene	4	13.193
Cyclohexane	73	366.475
Dibenz(a,j)acridine	5	0.001
Dibenzo(a,h)anthracene	9	0.001
Dibenzo(a,i)pyrene	3	0.001
Dibenzo(c,g)carbazole:7H-	2	<0.001
Dichloroethane:1,2-	2	7.683
Dichloromethane	5	38.415
Dicyclopentadiene	2	3.218
Diethanolamine (and its salts)	7	11.321
Dioxane:1,4-	1	0.350
Dioxins and furans	19	<0.001
Ethylbenzene	53	183.098
Ethylene	20	1,101.260
Ethylene glycol	24	158.950
Ethylene oxide	3	9.082
Fluoranthene	12	0.449
Formaldehyde	29	328.508
Formic acid	2	0.446
HCFC-142b	1	111.134
HCFC-22	5	1.687
Hexachlorobenzene	17	0.005
Hexachloroethane	1	0.001
Hexane:n-	116	1,738.924
Hexavalent chromium compounds	11	1.826
Hydrochloric acid	21	461.738
Hydrogen fluoride	9	1,217.511
Hydrogen sulphide	80	1,636.226
Indeno(1,2,3-CD)pyrene	11	0.005
Isoprene	1	0.136
Isopropyl alcohol	9	82.519
Lead (and its compounds)	24	1.403
Manganese (and its compounds)	15	12.408
Mercury (and its compounds)	27	1.063
Methanol	72	2,531.786
Methyl ethyl ketone	7	77.198
Methyl isobutyl ketone	3	31.208
Methyl-2-pyrrolidone:N-	1	0.100
Methylenebis(phenylisocyanate)	3	0.112

Substance	Facilities Reporting	Total Reported Emissions of the Substance (tonnes)
Molybdenum trioxide	1	1.301
Naphthalene	11	13.566
Nickel (and its compounds)	11	4.311
Nitrate ion in solution at pH $\geq$ 6.0	1	16.420
Nitric acid	1	0.044
PAHs, total Schedule 1, Part 2	4	0.466
Pentachloroethane	1	0.001
Perylene	10	0.002
Phenanthrene	11	3.510
Phenol (and its salts)	4	8.964
Phenylenediamine (and its salts):p-	1	0.004
Phosphorus (total)	9	88.666
Polymeric diphenylmethane diisocyanate	3	4.492
Propylene	18	244.287
Pyrene	11	0.432
Selenium (and its compounds)	1	0.002
Styrene	9	172.251
Sulphuric acid	19	1,928.691
Tetrachloroethane:1,1,2,2-	1	0.022
Tetrachloroethylene	3	0.396
Tetraethyl lead	1	<0.001
Titanium tetrachloride	1	0.025
Toluene	110	756.324
Toluenediisocyanate (mixed isomers)	2	0.130
Trichloroethane:1,1,2-	1	0.134
Trichloroethylene	1	14.100
Trimethylbenzene:1,2,4-	45	159.756
Vanadium (except when in an alloy) and its compounds	6	5.043
Vinyl acetate	1	114.000
Vinyl chloride	2	8.523
Xylene (all isomers)	120	1,293.278
Zinc (and its compounds)	13	12.232

Table 11: 2002 total CAC emissions for Alberta and Canada.

A) Alberta*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Total Industrial Sources	362,139	429,756	593,542	8,217	69,632	41,067	26,066	395,168
Total Non Industrial Fuel Combustion Sources	132,827	98,527	39,976	361	16,863	11,374	8,791	6,622
Total Transportation Sources	6,437	225,836	1,229,276	2,084	13,108	12,981	11,988	92,035
Total Incineration Sources	381	3,981	566	596	239	161	158	456
Total Miscellaneous Sources	8	2	1,461	59,609	4,441	2,942	1,866	41,827
Total Open Sources	62	22,569	706,268	79,563	5,578,188	1,842,868	318,707	209,548
Total With Open Sources	501,855	780,671	2,571,090	150,430	5,682,471	1,911,393	367,575	745,657
Total Without Open Sources	501,793	758,102	1,864,821	70,867	104,283	68,526	48,869	536,108

B) Canada*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Total Industrial Sources	1,536,648	743,696	1,740,891	32,790	636,219	307,526	175,644	795,377
Total Non Industrial Fuel Combustion Sources	654,447	359,800	782,940	4,908	201,852	147,263	130,066	167,398
Total Transportation Sources	74,546	1,357,753	8,279,432	18,634	75,460	74,400	67,583	692,383
Total Incineration Sources	1,726	7,386	11,063	3,299	2,390	2,016	1,907	3,379
Total Miscellaneous Sources	84	85	12,478	196,394	28,322	21,215	15,858	490,578
Total Open Sources	763	105,386	3,321,438	317,788	15,055,634	4,970,936	955,183	726,353
Total With Open Sources	2,268,213	2,574,106	14,148,243	573,813	15,999,877	5,523,355	1,346,241	2,875,468
Total Without Open Sources	2,267,450	2,468,720	10,826,804	256,025	944,243	552,419	391,058	2,149,116

*Adapted from the 2002 National CAC Inventory^{vii}, numbers may not add up due to rounding.

Table 12: 2002 CAC emissions from industrial sources for Alberta and Canada.

A) Alberta*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Abrasives Manufacture	0	0	0	0	0	0	0	0
Aluminum Industry	3,802	194	0	0	97	0	0	0
Asbestos Industry	0	0	0	0	0	0	0	0
Asphalt Paving Industry	0	0	34	0	2,125	300	110	0
Bakeries	0	0	0	0	0	0	0	289
Cement and Concrete Industry	1,640	4,402	1,662	0	2,867	1,428	475	36
Chemicals Industry	3,183	17,030	3,515	6,081	2,518	1,819	1,137	1,797
Clay Products Industry	17	12	25	0	608	39	3	0
Coal Mining Industry	1,285	1,099	0	0	3,163	1,756	1,065	491
Ferrous Foundries	0	2	797	0	87	82	76	5
Grain Industries	0	0	0	0	12,245	2,643	479	0
Iron and Steel Industries	41	179	266	0	165	89	67	57
Iron Ore Mining Industry	0	0	0	0	0	0	0	0
Mining and Rock Quarrying	0	0	0	0	219	18	2	139
Non-Ferrous Mining and Smelting	0	0	0	173	22	22	2	0
Oil Sands	103,772	21,114	39,435	1,243	4,233	3,022	1,840	34,313
Other Petroleum and Coal Products	0	0	0	0	0	0	0	0
Paint & Varnish Manufacturing	0	0	0	0	0	0	0	10
Petrochemical Industry	131	5,676	1,933	0	282	277	123	3,551
Petroleum Refining	7,100	4,373	4,932	20	919	688	454	1,699
Plastics & Synthetic Resins Fabrication	0	21	0	0	8	8	5	103
Pulp and Paper Industry	3,244	4,547	8,413	305	1,716	1,194	924	1,715
Upstream Oil and Gas Industry	237,791	358,852	350,973	0	5,453	5,438	5,427	338,574
Wood Industry	57	3,453	170,798	78	19,104	11,108	5,280	7,417
Other Industries	76	8,804	10,760	318	13,802	11,139	8,599	4,970
Total Industrial Sources	362,139	429,756	593,542	8,217	69,632	41,067	26,066	395,168

*Adapted from the 2002 National CAC Inventory^{vii}, numbers may not add up due to rounding.

B) Canada*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Abrasives Manufacture	9	11	2	9	244	86	76	58
Aluminum Industry	62,729	1,968	332,007	265	10,729	6,759	5,069	1,479
Asbestos Industry	404	117	42	2	53	37	14	1
Asphalt Paving Industry	68	139	1,177	52	32,981	4,939	1,673	963
Bakeries	0	1	2	1	0	0	0	5,625
Cement and Concrete Industry	47,787	42,860	22,372	374	25,126	12,844	5,114	858
Chemicals Industry	16,765	27,607	13,458	9,726	4,779	3,238	1,912	5,930
Clay Products Industry	340	89	221	42	11,977	1,215	424	5
Coal Mining Industry	2,313	2,830	42	0	13,834	7,323	3,561	1,537
Ferrous Foundries	1,337	427	48,426	31	6,661	5,940	5,308	793
Grain Industries	0	1	1	0	61,589	13,426	2,396	0
Iron and Steel Industries	32,093	18,907	43,529	225	18,779	10,781	6,954	17,867
Iron Ore Mining Industry	12,513	7,002	6,656	136	47,839	28,282	13,467	1,176
Mining and Rock Quarrying	3,198	13,534	11,043	909	109,582	15,944	6,502	1,046
Non-Ferrous Mining and Smelting	762,096	4,726	4,298	313	11,487	8,111	5,910	72
Oil Sands	108,022	23,562	41,011	1,243	4,358	3,147	1,965	35,784
Other Petroleum and Coal Products	397	90	285	10	7	7	6	625
Paint & Varnish Manufacturing	0	27	4	19	73	71	62	2,593
Petrochemical Industry	155	6,660	3,149	50	513	466	164	6,110
Petroleum Refining	106,313	32,052	74,718	127	6,663	5,034	3,400	18,314
Plastics & Synthetic Resins Fabrication	55	275	2,181	111	260	242	180	4,423
Pulp and Paper Industry	71,202	53,396	130,000	4,436	39,906	28,164	20,632	24,764
Upstream Oil and Gas Industry	277,914	431,238	423,380	6,197	9,061	9,040	8,962	533,133
Wood Industry	2,959	15,350	544,983	4,635	136,853	77,211	36,210	58,050
Other Industries	27,978	60,824	37,905	3,878	82,813	65,218	45,681	74,173
Total Industrial Sources	1,536,648	743,696	1,740,891	32,790	636,219	307,526	175,644	795,377

*Adapted from the 2002 National CAC Inventory^{xiii}, numbers may not add up due to rounding.

Table 13: 2002 CAC emissions from non-industrial fuel combustion sources for Alberta and Canada.

A) Alberta*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Commercial Fuel Combustion	653	4,506	904	25	563	545	527	243
Electric Power Generation (Utilities)	131,925	86,732	10,674	263	10,912	5,796	3,283	939
Residential Fuel Combustion	194	6,907	3,018	39	1,058	911	871	548
Residential Fuel Wood Combustion	54	381	25,380	34	4,331	4,122	4,109	4,892
Total Non Industrial Fuel Combustion Sources	132,827	98,527	39,976	361	16,863	11,374	8,791	6,622

B) Canada*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Commercial Fuel Combustion	20,638	33,948	7,299	1,447	4,943	4,221	3,641	1,794
Electric Power Generation (Utilities)	621,302	278,874	46,552	1,958	76,212	29,247	12,941	3,936
Residential Fuel Combustion	10,961	36,163	13,735	555	4,570	3,897	3,707	2,322
Residential Fuel Wood Combustion	1,546	10,816	715,354	948	116,127	109,897	109,778	159,346
Total Non Industrial Fuel Combustion Sources	654,447	359,800	782,940	4,908	201,852	147,263	130,066	167,398

*Adapted from the 2002 National CAC Inventory^{vii}, numbers may not add up due to rounding.

Table 14: 2002 CAC emissions from transportation sources for Alberta and Canada.

A) Alberta*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Air Transportation	451	7,446	6,794	3	243	135	95	1,293
Heavy-Duty Diesel Vehicles	714	55,638	11,462	85	1,526	1,526	1,408	2,165
Heavy-Duty Gasoline Trucks	152	7,408	48,681	55	104	101	83	2,640
Light-Duty Diesel Trucks	83	1,511	1,176	6	172	172	158	638
Light-Duty Diesel Vehicles	4	95	93	0	10	10	9	31
Light-Duty Gasoline Trucks	692	21,927	494,232	973	236	229	179	29,642
Light-Duty Gasoline Vehicles	436	18,365	355,921	899	72	70	65	23,502
Marine Transportation	0	0	0	0	0	0	0	0
Motor Cycles	3	186	2,274	2	3	3	2	340
Off-Road Use Of Diesel	3,211	86,261	47,549	53	9,293	9,293	9,015	9,847
Off-Road Use Of Gasoline	65	12,428	258,492	7	538	538	499	21,251
Rail Transportation	628	14,572	2,602	1	324	324	275	685
Tire Wear & Brake Lining	0	0	0	0	586	579	200	0
Total Transportation Sources	6,437	225,836	1,229,276	2,084	13,108	12,981	11,988	92,035

*Adapted from the 2002 National CAC Inventory^{vii}, numbers may not add up due to rounding.

B) Canada*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Air Transportation	3,844	63,230	56,323	26	2,092	1,157	816	9,609
Heavy-Duty Diesel Vehicles	5,354	302,054	59,867	492	8,361	8,361	7,722	11,365
Heavy-Duty Gasoline Trucks	647	27,994	161,681	211	407	395	322	9,643
Light-Duty Diesel Trucks	334	4,914	3,817	20	574	574	529	2,056
Light-Duty Diesel Vehicles	95	1,604	1,610	9	172	172	158	496
Light-Duty Gasoline Trucks	5,603	128,331	2,628,095	6,789	1,241	1,204	998	154,638
Light-Duty Gasoline Vehicles	6,181	157,446	2,861,260	10,434	845	821	775	178,284
Marine Transportation	31,135	112,468	9,068	314	5,575	5,575	5,328	7,569
Motor Cycles	23	1,242	15,656	10	21	20	14	3,161
Off-Road Use Of Diesel	15,239	383,180	211,354	235	40,975	40,975	39,746	44,124
Off-Road Use Of Gasoline	901	55,080	2,249,191	82	7,940	7,940	7,317	265,778
Rail Transportation	5,190	120,210	21,510	10	2,680	2,680	2,277	5,660
Tire Wear & Brake Lining	0	0	0	0	4,578	4,526	1,580	0
Total Transportation Sources	74,546	1,357,753	8,279,432	18,634	75,460	74,400	67,583	692,383

*Adapted from the 2002 National CAC Inventoryⁱⁱⁱ, numbers may not add up due to rounding.

Table 15: 2002 CAC emissions from incineration sources for Alberta and Canada.

A) Alberta*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Crematorium	1	3	1	0	0	0	0	0
Industrial & Commercial Incineration	0	0	0	0	0	0	0	0
Municipal Incineration	0	0	0	0	0	0	0	0
Wood Waste Incineration	0	0	0	0	0	0	0	0
Other Incineration & Utilities	380	3,978	565	596	239	161	158	456
Total Incineration Sources	381	3,981	566	596	239	161	158	456

B) Canada*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Crematorium	5	31	15	0	3	3	3	1
Industrial & Commercial Incineration	371	384	1,318	46	49	31	29	479
Municipal Incineration	497	1,595	5,906	118	1,646	1,488	1,465	1,588
Wood Waste Incineration	0	0	0	0	0	0	0	0
Other Incineration & Utilities	851	5,375	3,824	3,135	693	493	409	1,310
Total Incineration Sources	1,726	7,386	11,063	3,299	2,390	2,016	1,907	3,379

*Adapted from the 2002 National CAC Inventory^{vii}, numbers may not add up due to rounding.

Table 16: 2002 CAC emissions from miscellaneous sources for Alberta and Canada.

A) Alberta*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Cigarette Smoking	0	0	298	0	63	63	63	1
Dry Cleaning	0	0	0	0	0	0	0	20
Fuel Marketing	8	2	0	0	0	0	0	10,860
General Solvent Use	0	0	0	0	0	0	0	21,554
Marine Cargo Handling Industry	0	0	0	0	0	0	0	0
Meat Cooking	0	0	0	0	870	870	870	0
Pesticides and Fertilizer Application	0	0	0	58,811	2,926	1,434	410	0
Printing	0	0	0	0	0	0	0	2,100
Structural Fires	0	0	1,163	0	581	575	523	564
Surface Coatings	0	0	0	0	0	0	0	6,729
Human	0	0	0	797	0	0	0	0
Total Miscellaneous Sources	8	2	1,461	59,609	4,441	2,942	1,866	41,827

*Adapted from the 2002 National CAC Inventory^{vii}, numbers may not add up due to rounding.

B) Canada*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Cigarette Smoking	0	0	2,874	4	607	607	607	10
Dry Cleaning	0	2	1	2	0	0	0	285
Fuel Marketing	84	10	6	3	9	9	7	94,361
General Solvent Use	0	0	0	0	0	0	0	248,872
Marine Cargo Handling Industry	0	0	0	0	2,956	1,622	622	1
Meat Cooking	0	0	0	0	8,739	8,739	8,739	0
Pesticides and Fertilizer Application	0	0	0	192,480	11,213	5,494	1,570	0
Printing	0	73	28	24	13	7	6	48,250
Structural Fires	0	0	9,571	0	4,785	4,737	4,307	4,642
Surface Coatings	0	0	0	0	0	0	0	94,157
Human	0	0	0	3,881	0	0	0	0
Total Miscellaneous Sources	84	85	12,478	196,394	28,322	21,215	15,858	490,578

*Adapted from the 2002 National CAC Inventory^{vi}, numbers may not add up due to rounding.

Table 17: 2002 CAC emissions from open sources for Alberta and Canada.

A) Alberta*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{tot} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Agriculture (Animals)	0	0	0	77,992	114,281	73,140	11,428	112,166
Agriculture Tilling and Wind Erosion	0	0	0	0	510,939	249,469	6,972	0
Construction Operations	0	0	0	0	1,198,428	359,525	71,895	0
Dust from Paved Roads	0	0	0	0	232,273	44,519	10,646	0
Dust from Unpaved Roads	0	0	0	0	3,435,038	1,043,119	157,600	0
Forest Fires	50	22,468	705,278	1,511	85,641	72,795	59,949	96,724
Landfills Sites	0	30	0	52	505	42	10	305
Mine Tailings	0	0	0	0	895	72	18	0
Prescribed Burning	12	71	990	8	189	189	189	354
Total Open Sources	62	22,569	706,268	79,563	5,578,188	1,842,868	318,707	209,548

*Adapted from the 2002 National CAC Inventory^{vii}, numbers may not add up due to rounding.

B) Canada*

Category / Sector	SO ₂ (tonnes)	NO _x (tonnes)	CO (tonnes)	NH ₃ (tonnes)	PM _{10t} (tonnes)	PM ₁₀ (tonnes)	PM _{2.5} (tonnes)	VOC (tonnes)
Agriculture (Animals)	0	0	0	310,051	287,857	184,228	28,786	271,709
Agriculture Tilling and Wind Erosion	0	0	0	0	1,804,018	880,379	24,753	0
Construction Operations	2	0	86	0	2,135,981	640,744	127,938	0
Dust from Paved Roads	0	0	0	0	2,982,302	571,609	136,755	0
Dust from Unpaved Roads	0	0	0	0	7,398,916	2,344,595	349,441	0
Forest Fires	251	102,972	3,249,474	7,393	397,740	337,349	278,319	440,396
Landfills Sites	360	582	3,013	189	4,909	1,022	668	7,889
Mine Tailings	0	0	0	0	32,544	2,604	651	0
Prescribed Burning	150	1,832	68,865	156	11,366	8,406	7,872	6,358
Total Open Sources	763	105,386	3,321,438	317,788	15,055,634	4,970,936	955,183	726,353

*Adapted from the 2002 National CAC Inventory^{vii}, numbers may not add up due to rounding.

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